# 4D Integrated Study Using Geology, Geophysics, Reservoir Modeling & Rock Mechanics to Develop Assessment Models for Potential Induced Seismicity Risk

## PROJECT FACT SHEET

**Program**
2012 Unconventional Resources

**Project Number**
12122-91

**Start Date**
June 2014

**Duration**
24 Months

**RPSEA Share**
$1,459,789

**Cost Share**
$379,395

**Prime Contractor**
The Board of Regents of
the University of Oklahoma

**Participants**
None

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**Reports and Publications**
www.rpsea.org/projects/12122-91

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## Research Objectives

The objectives of this project are to understand the conditions in central Oklahoma that have increased the seismicity and potentially generated induced seismicity, via an innovative and highly integrated study of the geology, geophysics, reservoir and geo-mechanical conditions in the target area.

## Approach

The lessons learned in study are intended to be transferable to other areas where the possibility of induced seismicity is an issue. A specific issue is developing a list of “best practices and methods” standards to address the likelihood and risk of induced seismicity. This study will integrate a variety of methods and data at different scales to evaluate what properties may be most helpful in rigorously identifying both induced seismicity and the potential for induced seismicity, based on modeling and physical measurements.

## Accomplishments

We have our project off to a fast start, and we are fully staffed with researchers and students. The gravity surveying and the expansion and improvements to our seismograph network are also well underway. We are also experiencing positive interactions with industry and state agencies. Our ambitious 3-D modeling effort is making good progress, and a key algorithm is working, but needs to be scaled up.

## Significant Findings

Our project is only in its 3rd month of funding and activity, but we have already made significant progress on our technology transfer effort. A major joint U.S. Geological Survey/Oklahoma Geological Survey conference on induced seismicity with be held in Oklahoma City in November of 2014.

## Acknowledgements

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